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XIV.—*Descriptions and Records of Bees.*—LXIX.

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*Parasphcodes cervicalis*, sp. n.

♀.—Length 10–11 mm.

Black, robust; closely allied to *P. dissimulator*, Ckll., differing thus:—Face narrower, eyes more converging below; flagellum only very faintly reddish at end; stigma dark rufo-fuscous; nervures more slender, fuscous; wings variable in tint, but not so red; dark hair on outer side of hind tibiæ dark sooty; brush at apex of hind basitarsus not brilliantly coloured; tubercle on second ventral segment hairy, but without a well-defined tuft. It is easily known from *P. nouchinus*, Ckll., by the much more densely punctured mesothorax and the more finely and closely punctured first abdominal segment.

*Hab.* Eaglehawk Neck, Tasmania, Feb. 12–Mar. 3, 1913 (R. E. Turner). British Museum.

At Mt. Wellington, Tasmania, Jan. 15–Feb. 6, 1913, Mr. Turner took specimens of *P. plorator*, Ckll.

*Parasphcodes latissimus*, sp. n.

♀.—Length about or almost 10 mm., abdomen 3.25 mm. broad.

Head (including antennæ), thorax, and legs black; abdomen very broad, dark chestnut-red, first segment black except broad hind margin; second and third segments each with dark spots at extreme sides, that on third much larger than that on second; hair of pleura and sides of metathorax rather abundant, dull white, that of front, vertex, mesothorax, and scutellum thin, dark fuscous, of postscutellum ferruginous; head broad; mandibles dark red at extreme tip; clypeus shining, sparsely punctured; front dull, mesothorax moderately shining, with very small punctures, well separated in central region, longitudinal groove distinct; scutellum sculptured like mesothorax, but punctures a little smaller; area of metathorax with close wrinkled rugæ, not confined to the basal half; posterior truncation sharply defined, the upper lateral corners prominent; tegulæ piceous with a large rufous spot. Wings strongly dusky, stigma and nervures dark rufo-fuscous, outer r. n. and t.-c. thin, but dark and distinct; first r. n. meeting second t.-c.; second s.m. broad. Hair of legs largely pale, but black on outer side of middle and hind tibiæ, shining creamy-white on inner side of hind tibiæ, orange on inner side of tarsi; hind spur simple. Abdomen with excessively fine punctures on first two segments; no hair-bands or patches, hair at apex dark fuscous.

*Hab.* Bridport, Tasmania, 26-30 Oct., 1913 (*Littler*, 2557).

Closely allied to *P. recessus*, Ckll., but rather larger, with dark fuscous hair on mesothorax, strongly dusky wings, punctures of mesothorax ordinary, tegulæ not black, hair on outer side of middle tibiæ black.

*Halictus cyclognathus*, Cockerell, var. *a*.

♂.—Middle and hind tarsi dark, the basitarsi black.

Three from Eaglehawk Neck, Tasmania, Feb. 12-Mar. 3, 1913 (*R. E. Turner*). British Museum.

At the same locality and time Mr. Turner took a male of *H. niveifrons*, Ckll.

*Halictus isthmalis*, Cockerell.

♀.—Length about or a little over 6 mm.

Black, including legs, antennæ, and mandibles; head broad, clypeus shining, black, with strong scattered punctures; front dull, somewhat glistening at sides; mesothorax shining, with strong punctures, well separated on disc;

scutellum with minute punctures; area of metathorax finely, regularly plicatulate, the plicæ more or less joined by little transverse ridges; tegulæ black. Wings strongly greyish; hair on inner side of tarsi light fulvous. Abdomen very broad, shining, finely but not closely punctured; lateral bases of second and third segments with small triangular patches of white tomentum; caudal rima pale brownish; hind margins of segments wholly dark; venter with white hair.

*Hab.* Eaglehawk Neck, Tasmania, Feb. 12–March 3, 1913 (Turner). British Museum.

This was taken at the same time and place as numerous male *H. isthmalis*, and, in spite of the dusky wings, I feel assured that it is the female of that species. The general characters, sculpture, &c., are quite the same.

*Halictus pulvitectus*, sp. n.

♀.—Length 6.5–7 mm.

Black, robust, hind margins of abdominal segments testaceous, the first very narrowly, the others successively more broadly, the fourth having a broad whitish margin; pubescence rather dull white above and below, giving the insect a dusty appearance, especially on the fourth abdominal segment, which is conspicuously though thinly hairy; head broad; mandibles black, at most slightly marked with dark red; clypeus shining, very sparsely punctured; front dull in middle, shining at sides; flagellum short, with only a slight reddish tinge; mesothorax and scutellum shining, closely and finely punctured; area of metathorax glistening, very delicately plicatulate, but irregularly, the effect being that of an indistinct network rather than well-defined striæ; tegulæ rufo-piceous. Wings brownish, stigma and nervures rather dilute reddish brown; second s.m. broad, but third much broader; outer r. n. and t.-c. much weakened; first r. n. meeting second t.-c. Legs black, with white hair; brush at end of hind basitarsus bright red. Abdomen broad, shining, with extremely fine punctures. Microscopical characters: front densely and minutely punctured; mesothorax not sculptured between the punctures; hind spur with numerous very small stout teeth.

♂.—Length about 6 mm.

Similar in general characters, including a swelling on each side of first and second abdominal segments; head broad; labrum and mandibles (except base) ferruginous; clypeus with an apical cream-coloured band; flagellum long, monili-

form, with a hardly noticeable brownish tint beneath; tegulæ ferruginous. Wings dilute brownish, first r. n. reaching second s.m. before end. Legs black, with white hair, anterior knees and small joints of anterior tarsi red. Abdomen shining, the segments more narrowly margined; lateral bases of second and third segments with inconspicuous transversely elongated patches of pale hair. Stipites with a large, dark, shining base and long, pale, briefly hairy, finger-like apical part; on the inner side of the basal part, near the apex, is a tubercle bearing a dense tuft of light ferruginous bristles; sagittæ strongly curved downward.

*Hab.* Type (♀) and cotype ♂ and ♀, Eaglehawk Neck, Tasmania, Feb. 12–March 3, 1913 (*R. E. Turner*). British Museum. Also a ♀ from Launceston, Tasmania, Nov. 1, 1914 (*F. M. Littler*, 2568).

Resembles *H. orbatus*, Sm., but distinct by characters of mesothorax, tegulæ, &c. *H. victoriellus*, Ckll., is smaller, with a much more finely punctured mesothorax.

*Halictus cyclurus*, sp. n.

♀.—Length about 5.5 mm.

Head and thorax black, with thin hair, which is faintly ochraceous-tinted above, dull white beneath; abdomen very broad and short, subcircular (but capable of being more extended), rather dark chestnut-red, the first segment black, except a broad marginal red band, which has a deep rounded incision on each side anteriorly; second segment with a transverse blackish band, which is broadly arched, but on each side bends obliquely forward; third segment clouded with dusky at sides; remaining segments fuscous; venter bright clear ferruginous, blackened toward apex, especially at sides; head, thorax, and abdomen shining, the clypeus and supraclypeal area brilliantly polished; area of metathorax with more than basal half dull and very delicately plicatulate; head broad; flagellum rather dark castaneous beneath; mandibles (except basally) and labrum dark red; tegulæ rufo-testaceous. Wings hyaline, nervures and stigma pale yellowish brown; outer r. n. and t.-c. thin, but quite distinct; first r. n. meeting second t.-c.; third s.m. much broader than second. Legs black, with pale hair, the anterior knees red, the tarsi obscurely subrufous; hind spur with several teeth. The front is minutely roughened; the mesothorax microscopically lineolate, with scattered extremely minute punctures. The whole area of metathorax

is microscopically tessellate, and the plicæ on basal half are irregular, many of them imperfect.

*Hab.* Tambourine Mountain, Queensland, Oct. 27, 1912 (*H. Hacker*). Queensland Museum, 95.

Allied to *H. hedleyi*, Ckll., of which only the male is known; the venation differs conspicuously from that of *hedleyi*, and I do not believe *H. cyclurus* can be its female.

The following five species of black *Halictus* from Tasmania constitute a puzzling series, shown by their microscopical characters to be distinct from one another and from previously described forms. I have named them in memory of men connected with the history of Tasmania. The following key separates them on the microscopical characters:—

- Front finely striate. (Scape minutely punctured; mesothorax tessellate, with fine, rather close punctures; area of metathorax with minute wavy plicæ, from which arise many short projections; abdomen distinctly punctured.) . . . . . *H. baudini*, Ckll.
- Front with irregular minute labyrinthiform wrinkles. (Mesothorax tessellate, with very minute sparse punctures; area of metathorax very finely plicatulate, the ridges partly anastomosing, reaching fully three-quarters distance to margin, the surface between the plicæ minutely tessellate; abdomen finely lineolate, with only very minute piliferous punctures; hind spur of ♀ with a few stout, not very long teeth.) . . . . . *H. furneauxi*, Ckll.
- Front densely punctate, so densely as to appear minutely cancellate . . . . . 1.
1. Area of metathorax with strong irregular plicæ, confined to basal half, but the surface minutely lineolate-reticulate, the more directly continuous lines running transversely. (Mesothorax rough with a minute tessellation, and finely but rather closely punctured.) . . . . . *H. boweni*, Ckll.
- Area of metathorax plicate or reticulate over most of the surface. . . . . 2.
2. Mesothorax dull, the disc minutely regularly tessellate, with widely separated minute punctures; at sides the punctures are relatively large and dense, with the intervals finely striate-wavy. (Area of metathorax with coarse, irregular, labyrinthiform wrinkles, more transverse than longitudinal; abdomen distinctly punctured.) . . . . . *H. blighi*, Ckll.
- Mesothorax shining, the disc with the surface-markings irregular and the punctures, especially posteriorly, rather large and tending to be bordered by plicæ, or the punctures may be more or less confluent. (Area of metathorax coarsely irregularly reticulate; abdomen well punctured.) . . . . . *H. bassi*, Ckll.

The following table will further facilitate identification :—

Females .....	1.	
Males .....	4.	
1. Hind margins of abdominal segments pallid or testaceous .....	2.	<i>H. pulvitectus</i> , Ckll.
Hind margins of abdominal segments dark ..		
2. Mesothorax (seen under a lens) distinctly punctured .....	3.	
Mesothorax feebly or very minutely punctured .....		<i>H. furneauxi</i> , Ckll.
3. Small, wings greyish .....		<i>H. isthmalis</i> , Ckll.
Larger, wings brownish .....		<i>H. littleri</i> , Ckll.
4. Clypeus all dark .....	5.	
Clypeus with a light marginal band .....	6.	
5. Antennæ rather short, face very hairy ....		<i>H. niveifrons</i> , Ckll.
Antennæ very long .....		<i>H. blighi</i> , Ckll., and [ <i>H. bassi</i> , Ckll.]
6. Very minute, mesothorax very shiny .....		<i>H. cyclognathus</i> , Ckll.
Medium size .....	7.	
7. Tegulæ amber, tibiæ red .....		<i>H. hamatopus</i> , Ckll.
Not thus brightly coloured on tegulæ and legs .....	8.	
8. Smaller, tarsi red or reddish .....		<i>H. isthmalis</i> , Ckll.
Larger, tarsi dark .....		<i>H. baudini</i> , Ckll., and [ <i>H. boweni</i> , Ckll.]

*Halictus furneauxi*, sp. n.

♀.—Length about 7 mm., anterior wing 5 mm.

Black, robust, with thin dull white hair, very pale yellowish on inner side of tarsi; head broad; mandibles strongly bidentate, deep chestnut-red apically; clypeus shining, with large irregular punctures, more or less in longitudinal rows; supraclypeal area dullish, with very minute punctures; antennæ black; mesothorax dullish, with extremely minute punctures; area of metathorax weakly and finely plicatulate; tegulæ rufo-piceous. Wings grey; stigma large, dilute reddish brown; outer r. n. and t.-c. extremely weak; second s.m. very broad, but third broader; first r. n. meeting second t.-c. Legs black, hind legs obscurely brownish. Abdomen shining, without evident punctures; basal corners of third and fourth segments with white hair, the fourth with quite dense patches; venter with straight (not curled) white hair.

*Hab.* Eaglehawk Neck, Tasmania, Feb. 12–March 3, 1913 (Turner). British Museum.

Superficially like *H. sturti*, Ckll., but easily separated by the less shining mesothorax and more delicately sculptured area of metathorax.



*Halictus blighi*, sp. n.

♂.—Length about 6 mm.

Slender, black, with thin but rather long white hair; head very broad, eyes strongly converging below; clypeus shining, wholly black; antennæ extremely long (reaching metathorax), black, flagellar joints moniliform; mesothorax dull, finely punctured; area of metathorax large, well defined, appearing under a lens finely irregularly cancellate; tegulæ rufo-piceous. Wings greyish hyaline, stigma and nervures piceous; first r. n. joining the rather narrow second s.m. before end; third s.m. very broad; outer r. n. and t.-c. thin, but distinct. Legs black, with pale hair; anterior tibiæ partly dark reddish. Abdomen shining, with thin white hair at sides and apex; apical plate broadly rounded.

*Hab.* Mt. Wellington, Tasmania, Jan. 15–Feb. 6, 1913 (Turner). British Museum.

Looks like *H. plebeius*, Ckll., but separated by the quite different antennæ, dark clypeus, dullish and sculptured scutellum, &c.

*Halictus bassi*, sp. n.

♂.—Length about 5.5 mm.

Much like *H. blighi*, but with the following special characters:—Mandibles broadly red apically; disc of mesothorax shining between the punctures.

Variety *a.*—Only two submarginal cells, the first t.-c. absent.

*Hab.* Mt. Wellington, Tasmania, Jan. 15–Feb. 6, 1913 (Turner). British Museum.

Possibly a variety of *H. blighi*, which it resembles in everything of importance except the sculpture of the mesothorax, which is quite distinctive.

*Halictus baudini*, sp. n.

♂.—Length about 7 mm.

Black, rather robust, with long thin white hair, that on front of head and head and thorax above tinged with reddish brown; head very broad; mandibles black or reddish apically; clypeus shining, sparsely punctured, with a broad cream-coloured band; supra-clypeal area dull, abruptly contrasting with clypeus; antennæ extremely long, flagellum moniliform, faintly brownish beneath; mesothorax moderately shining in middle, otherwise quite dull; scutellum shining; area of metathorax appearing coarsely granular

under a lens; tegulæ piceous, with a brown spot. Wings greyish, stigma and nervures dilute red-brown; second s.m. very broad; first r. n. meeting second t.-c.; outer r. n. and t.-c. distinct. Legs black. Abdomen broad, shining black, without hair-bands or patches; a broad dark red apical plate.

*Hab.* Mt. Wellington, Tasmania, Jan.-March, 1913, 3 ♂ (*Turner*). British Museum.

Larger than *H. repertus*, Ckll., with quite different area of metathorax, &c.

*Halictus boweni*, sp. n.

♂.—Length a little over 6 mm.

Superficially like *H. baudini*, but differing thus:—A little smaller; head smaller, eyes more converging below; anterior and middle tibiæ light red in front; area of metathorax concave, with plicæ not covering surface; scutellum finely punctured all over, without any median depression; abdomen much narrower; stigma darker; second s.m. much narrowed above.

*Hab.* Eaglehawk Neck, Tasmania, Feb. 12–March 3, 1913 (*Turner*). British Museum.

*Paracolletes subviridis*, sp. n.

♀.—Length 9.5 mm.

Rather slender, apparently black, but on close inspection it is seen that the front, mesothorax (except a large central area), and abdomen are faintly greenish, the colour extremely obscure; hair of head and thorax dull white, partly black on clypeus and extreme sides of face, black on vertex (but white on occiput), largely black or fuscous on mesothorax, scutellum, and postscutellum; head very broad; mandibles entirely black; clypeus shining, with strong, not very dense punctures; supra-clypeal area polished, punctured at sides; front dull, moderately shining at sides; antennæ black; mesothorax dull, moderately shining on disc, with only minute piliferous punctures; scutellum shining anteriorly; postscutellum dull, a little produced and tufted in middle; area of metathorax shining, without evident sculpture; tegulæ dark reddish. Wings hyaline, not at all reddish, nervures and stigma dark rufo-fuscous; b. n. meeting t.-m.; first r. n. reaching second s.m. at middle; second r. n. joining third s.m. a moderate distance from end. Legs black, with dull whitish hair, fulvous on inner side of basitarsi, black or



dark sooty on outer side of middle and hind tibiae; hind spur with long slender spines. Abdomen dullish, with very little hair, but third and fourth segments with thin white hair-bands, that on third interrupted in middle; hair at apex of abdomen black; hair of venter white.

*Hab.* Bridport, Tasmania, Oct. 26-30, 1913 (*Littler*, 2565).

Differs from *P. obscurus* (Sm.) by the black mandibles, tibial scopa beneath white (not yellow), dull thorax, &c. There is a curious superficial resemblance to *P. advena* (Sm.), but *subviridis* is a much narrower insect.

Other bees recently taken by Mr. Littler in Tasmania are:—

*Paracolletes melbournensis*, Ckll. Georgetown, 16 and 23 Nov., 1914.

*Paracolletes leai*, Ckll. Georgetown, 17 and 29 Nov., 1914.

*Binghamiella antipodes* (Sm.), ♀. Georgetown, 15 Nov., 1914.

*Exoneura hamulata*, Ckll., var., ♂. Bridport, 26-30 Oct., 1913.

*Euryglossa fasciatella*, Ckll., ♂. Swan Point, R. Tamar, 14 Oct., 1914.

Going over my material of *Paracolletes melbournensis*, I observe that certain specimens from Victoria (*French*) and Sydney (*Froggatt*) are between *mimulus* and *melbournensis*, being smaller, with the hair of mesothorax very red, without conspicuous dark hair. They possibly represent a variety of *P. mimulus* rather than of *melbournensis*, or a third species, very close to the others, may be indicated. Australian students will be able to settle the matter by field-studies.

#### *Paracolletes providus* (Smith).

I refer here a male from Eaglehawk Neck, Tasmania, Feb. 12-March 3, 1913 (*R. E. Turner*). It is about 7 mm. long, with shining dark purple abdomen. Is this, perhaps, the true *P. chalybæus* (Erichs.)? It is not *chalybæus* as understood by F. Smith.